C11-R3: MULTIMEDIA TECHNOLOGY AND VIRTUAL REALITY

NOTE:

> 1. **Answer question 1 and any FOUR questions from 2 to 7.**
> 2. **Parts of the same question should be answered together and in the same sequence.**

Time: 3 Hours **Total Marks: 100**

1.
a) Explain in brief Common Intermediate Format (CIF) and Quarter Common Intermediate Format (QCIF).
b) What are the crucial aspects of preparing digital audio files?
c) Explain briefly 'pee star sixty four' standard.
d) What is Group Sweeping Scheduling? What is its application?
e) Explain Dynamic Control Resource Reservation.
f) Explain the functioning of holographic displays.
g) What is S-VHS video? Where is it commonly used?

(7x4)

2.
a) What are the main features of MIDI standard and its associated messages?
b) Describe the principles of TIFF and its application domains.
c) What is the difference between one-dimensional coding and a two dimensional MMR Coding schemes?

(6+6+6)

3.
a) Identify and explain the meaning of the key QoS parameters associated with circuit switched and packet switched networks.
b) Discuss the term 'application service classes.' Include in your discussion how packets belonging to different classes are treated within the network.
c) Derive the time to transmit the following digitized image at 1.5 Mbps.
    i) a 640 x 480 x 8 VGA compatible image.
    ii) a 1024 x 768 x 24 SVGA compatible image.

(6+6+6)

4.
a) How are the following frames used in MPEG compression?
    i) I-frame
    ii) P-frame
    iii) B-frames
b) What are D-frames and in which type of applications these are used?
c) Explain the principles on which perceptual coders are based and how they differ from LPC and CELP coder.

(6+6+6)

5.
a) What are the characteristics of non-temporal media?
b) Explain the main features of Enhanced Definition Television Systems.

c)   How are the errors handled in CD-DA (compact disc digital audio) systems?

(6+6+6)

6.
a) What are the design goals in creating multimedia databases?
b) Describe the following algorithms:
   i) Earliest deadline first
   ii) SCAN-EDF
c) Explain the different services for multimedia applications that are provided by Windows Multimedia Extensions.

(6+6+6)

7.
a) How are Virtual environments created? Give examples?
b) Whys is CSMA/CD protocol not suitable for real-time video transfer?
c) Explain autostereoscopic displays.

(6+6+6)